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10/690,818	10/23/2003	Patrick J. Link	723-1443	5437

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EXAMINER

NGUYEN, DAT

ART UNIT	PAPER NUMBER
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3714

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/690,818

Applicant(s)

LINK, PATRICK J.

Examiner

Dat T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6, 14 and 17-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6, 14 and 17-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendments filed on July 27, 2006 in which applicant amends claims 6, 14, 17, 18, 21, 24, 25, 28, 29, 30, 31 and 34, adds claims 35-37, and responds to claim rejections. Claims 6, 14 and 17-37 are pending.

Claim Rejections - 35 USC § 112

2. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim states the limitation of "defining search, transfer, horizontal and vertical blank states." It is unclear to the examiner as to what these states actually refer to. The states specifically "search, transfer, horizontal and vertical blank" states are explained to some degree in the specification, specifically pages 23 – 29. However, the Examiner cannot determine what the states actually represent due to the sparse description.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 6, 14, 23, 26, 27, 32 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt dated June 5, 1999 in view of Dahl et al (US 5,949,985).

Regarding claims 6 and 14, Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 (herein referred to as "Snes9x") discloses an emulator program that emulates the SUPER NINTENDO ENTERTAINMENT SYSTEM (SNES). This emulator program is executed by a target platform such as a PC that is different than the video game platform (Snes9x page 5). It is well known in the art that a PC is capable of displaying graphical information on a target computing display device that has read/write memory and is capable of receiving user inputs. The Snes9x emulator processes and parses SNES ROM images (Snes9x page 6). The emulated platform is a handheld platform in that a player holds the game controllers of a SNES game system in their hands, thus constituting a handheld video game system. Snes9x also discloses modeling at least some display timing activities of the handheld video game device (page 8). Snes9x is an emulator program that emulates videogame software initially intended only for use with the SNES and so the videogame software is still capable for use with the original system. The Snes9x emulator produces real time interactive game presentations on the target platform (Snes9x page 4). The Snes9x emulator allows the target platform the option of running the emulated games in a windowed mode or a full screen mode (Snes9x page 7).

Snes9x is silent regarding the ROM pages and said method further includes said emulator program allocating ROM pages in said target computing device read/write memory and duplicating at least a portion for said allocated ROM pages. Dahl et al. discloses a method and data processing system for emulating a program that utilizes a typical paging architecture that swaps the pages between a main store and a DASD. To make the process more efficient and minimize overhead during emulation, the data is accessed identically, which minimizes paging. Since the emulated DASD and emulated main store are accessed identically, it is reasonable to assume that they contain the same files. The difference is that upon execution, the files in the main store, which are often scattered in discontinuous physical locations, are copied into an emulated DASD that is stored continuously (abstract, col. 2, lines 45-55, col. 5, lines 15-65). Furthermore, Dahl et al. discloses caching of instruction portions of code (col. 6, lines 1-15). Caching is well known in the art as duplicating a portion of data stored in the system, which is frequently used in order to minimize the resources by eliminating the need to constantly access the code every time it is needed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the paging architecture and duplication of ROM pages in order to minimize address translation and paging overhead during emulation (col. 5, lines 49-52).

4. Regarding claim 23, Snes9x does not disclose specifically the use of a page table to remap memory access instructions into different memory locations. However, Dahl et al. discloses a system wherein an emulator program may be used to emulate a target platform on a different host platform. This emulation system that Dahl et al.

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discloses utilizes translation or page tables that associates page selector bits with a 16-bit page number, which is concatenated to the page offset to access appropriate physical memory locations (Dahl 5:11 – 43). One of ordinary skill in the art would be motivated to modify Snes9x in view of Dahl et al. to provide an emulation system that utilizes page tables for the remapping of memory access instructions into different memory locations. One would be motivated to do so because Dahl states that by referencing storage objects through a translation table, the memory pages associated with a storage object can be scattered in dis-contiguous memory locations within the main store, while appearing to be contiguous.

5. Regarding claim 26, Snes9x discloses a CPU cycle timer that enables a user to set a percentage of CPU cycles to execute per scan line. This enables one to increase the emulation frame rate (Snes9x page 8).

6. Regarding claim 27, Snes9x discloses a frame skip count that enable the selectively skip frames (Snes9x page 8).

7. Regarding claim 29, Snes9x discloses a video game platform emulator as discussed above. The video game emulator emulates a video game platform on a different target platform. The purpose of the emulator is to emulate the video game platform on the target platform in every way. This would include the video game platforms memories and registers. Including the size of the registers, such as byte, word and long formats. Thus it would be obvious to create an emulator that emulates these aspects of the video game platform on the target platform. One of ordinary skill in the art would be motivated to modify Snes9x to emulate the memory structures of the

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video game platform, wherein the formats include byte, word and long register formats.

One would be motivated to do so because these are common register formats and purpose of the emulator is to emulate all aspects of the video game platform on the target platform, thus emulating the register formats.

8. Regarding claim 32, Snes9x discloses that a wide variety of joysticks or user input devices can be used by the Snes9x emulator (Snes9x page 10).

9. Regarding claims 35 and 36, Snes9x is for use in PCs, however it is well known in the art that laptop computers possess the same functionality and performance characteristics, which would make them capable of performing the same tasks as a standard desktop PC. The fact that they are laptops makes them handheld and portable. Furthermore, the examiner does not believe it to be a patentably distinct feature to implement the emulation program into a PDA since it is well known in the art that computers are constantly getting smaller and that devices such as PDAs and cellular phones are constantly being given more and more functionality of computers. Therefore it would be a matter of routine to one of ordinary skill in the art at the time of invention to implement the emulation program of Snes9x into a PDA or handheld portable computer in order to allow for users to play the games while being mobile.

10. Regarding claim 37, the limitations of claim 37 have been addressed above, Regarding the preamble which requires a handheld portable battery-operated computer device, please refer to the discussion regarding claims 35 and 36 above.

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Regarding the image software, ROM pages, generation of real time audio-visual presentation in response to video game software image, displaying audio-visual image as a subset of display area, and duplicating ROM pages, please see the discussion above regarding claims 6 and 14.

11. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 in view of Dahl et al. as applied to claim 6 above, in view of Nishiumi et al (US 6,007,428).

12. Regarding claims 17, Snes9x is silent as to what type of display screen that the system can utilize, such as a liquid crystal display. However, Nishiumi et al discloses a video game system wherein the display unit is a liquid crystal display (Nishiumi et al 25:56 – 57).

It would be obvious to one of ordinary skill in the art to modify Snes9x in view of Nishiumi et al for the purpose providing a video emulator system that displays emulated video information on a liquid crystal display. One would be motivated to use a liquid crystal display because they utilize less space and provide accurate video representations.

13. Regarding claim 18, the combination of Snes9x and Nishiumi et al. would yield a target platform that will display a representation of the emulated video game platform. The claim states the limitation of a “executing a virtual liquid crystal display controller state machine”. The Examiner is unclear as to what the Applicant means by this

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limitation. Thus as best understood by the Examiner, the combination of Snes9x and Nishiumi yields a virtual liquid crystal display controller state machine. The liquid crystal display unit of Nishiumi et al. possesses a liquid crystal display controller for controlling the graphical representations of the game system (Nishiumi et al 25:62 – 65). When emulating a video game platform, the representation of the emulated game platform can be thought of as a virtual representation of how the game would originally be represented on the video game platform. Thus, the liquid crystal display controller can be thought of as a virtual liquid crystal display controller state machine.

It would be obvious to one of ordinary skill in the art to modify Snes9x in view of Nishiumi et al for the purpose providing a video emulator system that displays emulated video information on a liquid crystal display. One would be motivated to use a liquid crystal display because they utilize less space and provide accurate video representations.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Munshi (US 6,084,600).

Regarding claim 19, Snes9x discloses a video game platform emulator. Snes9x does not disclose the use of hardware assisted BLIT memory transfers. However Munshi et al discloses a system for the speeding up of pixel data transfers (bitblits) by compressing and word aligning the data transferred. Munshi discloses that one way to reduce the amount of required bandwidth in a system when transferring pixel data is to

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use bitblit operations, wherein a rectangular region within the display memory is specified and data for pixels within the region is transferred (Munshi 1:57 – 62). While, Munshi discloses that this approach is sometimes associated with problems, it is stated that this is still effective for transferring data.

One of ordinary skill in the art would be motivated to modify Snes9x in view of Munshi for the purpose of using Blit operations to transfer pixel data. BLIT operations are known for reducing the bandwidth loads upon a system when updating pixel information in memory.

15. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Mackey et al (US 5,153,577).

Regarding claim 20, Snes9x does not disclose a precomputed translation table that translates the graphics of the video game platform. However, Mackey et al discloses an emulation system that will emulate a PC on another host system or platform (Mackey et al 3:51 – 55). The system of Mackey et al. discloses the use of translation tables (Tables 1, 6 – 9) that determine how that graphical character formats will be displayed upon the host platform (Mackey 44:60 – 45:60).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Mackey et al to provide an emulation system that utilizes translation tables to convert graphic formats that are compatible with the target platform. This would be beneficial because when running an emulator on a target platform the emulator must be able to

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translate the native graphics of the video game platform into a format the target platform can display.

16. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Sterchi (US 2003/0207712).

Regarding claim 21, the Snes9x system emulates the SNES video game platform. Thus in order to run properly the emulator must emulate or simulate the actual hardware and memory structures of the emulated system. Otherwise the original game ROMS would be rendered useless. Snes9x also discloses that in order for the emulator to run the target platform must have at least 16 MB of RAM (Snes9x page 5). While Snes9x does not specifically disclose that the emulator emulates registers and other hardware based memory structures in RAM, it is highly implied. However, Sterchi et al discloses a system that uses an emulator, wherein the emulator can be run on an entirely different hardware platform than the video game platform. Sterchi also discloses that the emulator may emulate or simulate some or all of the hardware and/or software components of the target system (Sterchi page 2:par 22).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Sterchi et al for the purpose of emulating registers and memory structures of the video game platform in RAM of the target platform. Sterchi discloses an emulator that would

emulate all of the hardware or software components of the targets system, thus this would include components such as the registers and memory structures.

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Morley (US 5,781,758).

Regarding claim 22, Snes9x does not disclose the uses of a jump table to parse incoming binary instructions. Morley however does disclose an emulation system that utilizes jump tables for the purpose of reducing memory requirements (Morley 3:21 – 48). Morley discloses that a jump table is commonly referred to as a dispatch table (Morley 1:42 – 50). Morley discloses that instead of storing every instance of a routine, the dispatch table will store the routine in memory when it is called and also store the address of the routine in memory in place of the pointer. Thus speeding up emulation.

One of ordinary skill in the art would be motivated to modify Snes9x in view of Morley to provide an emulation system that utilizes jump tables or dispatch tables to reduce the memory requirements on the system. By not storing every instance or a routine but only the address or a statically stored routine, unnecessary memory usage is eliminated.

18. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Z80-

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68K-v150 Z80 Engine written in 68020 assembler for inclusion in C/C++ projects, written by Gunter Woigk, dated Dec 25, 1999.

Regarding claim 24, Snes9x does not disclose a read only memory protection feature to prevent overwriting of ROM's during emulation. However, Woigk discloses an emulator package called the z80-68k which supports write protection for ROM's (Woigk page 2, 6).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Woigk to provide an emulator that had write protection functions such that the ROM's don't get overwritten during emulation. This would be of benefit due such that the ROM's are always protected from being overwritten.

19. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Mullarkey et al. (US 6,192,446).

Regarding claim 28, Snes9x does not disclose the use of a no-operation look ahead feature. However, Mullarkey et al. discloses a no operation look ahead feature that utilizes a look ahead circuit that will examine subsequent instructions and determine what banks in memory the instructions are intended for (Mullarkey 7:8 – 48). If the instructions are not meant for a specific bank of memory than that bank of memory can be powered down, thus optimizing the performance of the chip and system.

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One of ordinary skill in the art would be motivated to modify Snes9x in view of Mullarkey et al. for the purpose of providing a no-operation look-ahead feature. This would provide for a more efficient system that optimizes chip performance. If instructions are not meant for specific memories than those memories are not powered up thereby wasting processing time.

20. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Farber et al. (US 5,903,760)

Regarding claim 30, Snes9x discloses a video game platform emulator as discussed above. The video game emulator emulates a video game platform on a different target platform. The purpose of the emulator is to emulate the video game platform on the target platform in every way. This would include the way in which the emulated video game platform would handle CPU flags conditions. Snes9x does not specifically disclose the details of how the emulator handles CPU flags. However, Farber et al et al discloses a system of running Reduced Instruction Set Architecture (RISC) code on a system that is meant for Complex Instruction Set Architecture (CISC) or vice versa. Farber discloses that RISC may not support the setting of status flags as CISC would (Farber 2:17 – 22). Thus, Farber discloses a method of executing code that utilizes the setting of status flags on a system that has no native support for status flags (Farber 2:64 – 67). Farber discloses the use of a translator that is akin to an emulator program in that both transform non-native code into a format that the target

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platform can utilize (Farber 3:42 – 54). Farber discloses that the translation capsule table emulates the setting of status flags as part of the translated compare function. The flags are emulated by allocating bit fields within a general-purpose register (Farber 4:60 – 5:3).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Farber et al. for the purpose of modeling the emulation of the video game platform to allow for the updating of CPU flags, as this would enhance the capabilities of the target platform. The target platform would be able to preserve and emulate a video game platform that utilizes data such as flags even though the target platform may not natively do so.

21. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above and in view of Traut (US 5,790,825).

Regarding claim 31, Snes9x discloses a video game platform emulator as discussed above. However, Snes9x does not explicitly disclose that the emulated video game platform program counter is mapped to the target platforms memory, such as in a general-purpose register. Traut discloses an emulation system, wherein the program counter of the guest or emulated platform is mapped to the cache of the host or target platform (Traut 4:17 – 29).

One of ordinary skill in the art would be motivated to modify Snes9x in view of Traut to provide a system that maps the program counter of the video game platform to the memory of the target system. This would provide for lower address translation overhead, thus eliminating burdensome demands on the target platform.

22. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above, in view of Munshi (US 6,084,600) and in further view Duruoz et al. (US 6,658,056 B1)

Regarding claim 33, Snes9x discloses a video game platform as discussed above. Snes9x discloses an emulator that can operate in full screen or windowed mode (Snes9x page 7). Snes9x does not disclose the usage of screen memory buffers that are larger than the display are to improve paging usage and the transferring of a subset of said memory buffer using BITBLIT. Duruoz et al discloses a video graphics display method wherein a larger buffer memory is utilized for optimum use of the available memory and for optimal preservation of data to meet the highest performance requirements (col. 11, lines 1-27). By using a larger memory buffer memory processing due to the constant rendering of the display area would be reduced. Thus display information would not have to be rewritten or transferred out of storage by means of paging. Munshi et al discloses a system for the speeding up of pixel data transfers (bitblits) by compressing and word aligning the data transferred. Munshi discloses that one way to reduce the amount of required bandwidth in a system when transferring

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pixel data is to use bitblit operations, wherein a rectangular region within the display memory is specified and data for pixels within the region is transferred (Munshi 1:57 – 62). While, Munshi discloses that this approach is sometimes associated with problems, it is stated that this is still effective for transferring data.

One of ordinary skill in the art would be motivated to modify Snes9x in view of Munshi and in further view of Duruoz et al. to provide a memory buffer that is larger than the display area and using BITBLT to transfer data from memory to the display area. This would enable the system to eliminate memory-processing overhead thus making m. BLIT operations are known for reducing the bandwidth loads upon a system when updating pixel information in memory.

23. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snes9x: The Portable Super Nintendo Entertainment System Emulator v1.19 readme.txt in view of Dahl et al. as applied to claim 6 above, in view of Reed et al. (US 6,058,288).

Regarding claim 34, Snes9x discloses a video game platform as discussed above. Snes9x does not disclose the target platform comprising an airline seat-back controller. Reed et al. however discloses a passenger control unit that is in an airplane seat. The PCU can be in the armrest or the back of the seat (Reed et al 18:41 – 19:6). The airline system can be used for a plurality of uses such as gaming, computing or watching movies (Reed et al 6:26 – 36). Reed further states that the game system can

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be used for games like Super Nintendo Entertainment Service, which Snes9x emulates.

One of ordinary skill in the art would be motivated to modify Snes9x in view of Reed et al for the purpose of providing an emulator on a target platform such as an entertainment system on an airplane. This would provide enhance passengers flying experience despite being on long trips.

Response to Arguments

24. Applicant's arguments filed July 27, 2006 have been fully considered but they are not persuasive.

25. Regarding the discussion of dependent claim 18, The examiner was and still is unclear as what applicant defines as a virtual liquid crystal display controller and so for the purposes of furthering prosecution, the examiner has interpreted it is simply being a LCD controller. In which case, Nishiumi discloses a video game system that uses an LCD and therefore inherently possesses some sort of controller for the LCD.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dat T. Nguyen whose telephone number is 5712722178. The examiner can normally be reached on M-F 8am-5pm.

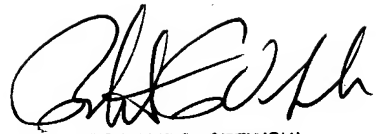
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John M. Hotaling can be reached on (571)272-4437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Dat Nguyen

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ROBERT OLSZEWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700